

Abstract

The present invention relates to a solder alloy and a multi-component soldering system, to the use of the same, and to a
5 method for repairing gas turbine components.

The solder alloy based on nickel contains the following elements: nickel (Ni), chromium (Cr), cobalt (Co), molybdenum (Mo), aluminum (Al), tantalum (Ta), niobium (Nb), yttrium (Y),
10 hafnium (Hf), palladium (Pd), boron (B) and silicon (Si).

The multi-component soldering system is made up of the solder alloy according to the present invention and additionally of at least one additive material. The additive materials are
15 made up of the following elements: nickel (Ni), chromium (Cr), cobalt (Co), molybdenum (Mo), aluminum (Al), tantalum (Ta), titanium (Ti), rhenium (Re), iron (Fe), niobium (Nb), yttrium (Y), hafnium (Hf), palladium (Pd), carbon (C), zirconium (Zr), boron (B) and silicon (Si).

20 A specific mixing of solder alloy and additive materials produces a multi-component soldering system that is specifically adapted to the material of the component to be repaired, the mixture ratio of solder alloy and additive
25 materials being freely selectable.

The repair method according to the present invention is based on high-temperature diffusion soldering using the solder alloy according to the present invention or the multi-component
30 soldering system according to the present invention.